

CLAIMS

1. An illuminating station (1, 4) for the manufacture of partially designed areas in one or more layers of a web of sheeting (3, 6), which illuminating station (1, 4) has one or more radiation sources (11, 41) for illuminating said web of sheeting (3, 6), wherein said illuminating station (1, 4) has a masking tape (2, 5) having partially designed areas (231, 232, 233, 234) showing different optical properties, and said illuminating station (1, 4) has two or more guide means (181, 182, 183, 184; 461, 462, 82, 83) for guiding said masking tape (2, 5) and/or for guiding said web of sheeting (3, 6), these being disposed such that said masking tape (2, 5) is guided through an illuminating zone in the path of radiation between said one or more radiation sources (11, 41) and said web of sheeting (3, 6), and said illuminating station (1, 4) has coupling means (182, 183; 7) for causing said masking tape (2, 5) to travel through said illuminating zone at the same speed as that of said web of sheeting (3, 6), characterized in that said masking tape (2,5) has a base layer (221) of a material which is permeable to the radiation of said one or more radiation sources (11, 41), and that said masking tape (2, 5) has
 - a) partially designed areas showing different optical refractive indices, and/or
 - b) partially designed areas (231, 232, 233, 234) showing different polarization properties, and/or
 - c) partially designed areas showing different reflective properties.
2. An illuminating station as defined in claim 1, characterized in that said illuminating station (4) has an inseting system (7, 75, 76, 71) which adjusts the position of said masking tape (5) relatively to said web of sheeting (6) in such a manner that the illumination is carried out in register.
3. An illuminating station as defined in claim 1 or claim 2, characterized in that said illuminating station (1, 4) has a tensioning device (17, 47) for tensioning said masking tape (2, 5).

4. An illuminating station as defined in any one of the previous claims, characterized in that said coupling means is in the form of at least one roller (182, 183), over which said web of sheeting (3) and said masking tape (2) are guided in superposition such that said masking tape (2) is caused to travel together with said web of sheeting (3).
5. An illuminating station as defined in claim 4, characterized in that said coupling means comprises two rollers (182, 183) disposed on each side of said illuminating zone for guiding said web of sheeting (3) and said masking tape (2) and two rollers (181, 184) disposed on each side of said illuminating zone for guiding said masking tape and for producing a contact pressure between said masking tape (2) and said web of sheeting (3).
6. An illuminating station as defined in any one of claims 1 to 3, characterized in that said illuminating station (4) has a driving system (71) for causing said masking tape (5) to travel at a first speed and that said coupling means is in the form of control device (7) which regulates a driving system (71), which control device synchronizes the first speed with the speed of said web of sheeting (6).
7. An illuminating station as defined in any one of the previous claims, characterized in that said masking tape (2, 5) is an endless web.
8. An illuminating station as defined in any one of claims 1 to 7, characterized in that said masking tape is an open web (91), which is guided from a first reel (94) supplying said masking tape to a second reel (95) receiving said masking tape.
9. An illuminating station as defined in any one of the previous claims, characterized in that said masking tape exhibits one or more personalized patterned regions.
10. An illuminating station as defined in any one of the previous claims, characterized in that said masking tape is a rewritable masking tape.

11. An illuminating station as defined in any one of the previous claims, characterized in that said masking tape (2) has a patterned region (23, 24, 25, 26) which is repeated once or a number of times.
12. An illuminating station as defined in any one of the previous claims, characterized in that said masking tape has partially designed areas showing transparent and/or absorbtive and/or reflective properties.
13. An illuminating station as defined in claim 1, characterized in that in the case of item b), said masking tape has an area in which the direction of polarization in which incident light is polarized changes continually.
14. An illuminating station as defined in claim 1, characterized in that in the case of item b), said masking tape has adjacent areas in which the direction of polarization in which incident light is polarized is different.
15. An illuminating station as defined in claim 1, characterized in that in the case of item b), said masking tape has adjacent areas in which the incident light is polarized and nonpolarized respectively.
16. An illuminating station as defined in any one of the previous claims, characterized in that said illuminating station has an optical filter, particularly a polarizer and/or band-pass filter, positioned in the optical path between said one or more light sources and said masking tape.
17. An illuminating station as defined in any one of the previous claims, characterized in that said illuminating station (1, 4) has a collimator (13, 42) positioned in the optical path between said one or more light sources (11, 41) and said masking tape (2, 5).
18. An illuminating station as defined in any one of the previous claims, characterized in that said radiation source (11, 41) is a light source, particularly a UV lamp.

19. An illuminating station as defined in any one of the previous claims, characterized in that said illuminating station has a screen (15, 43, 44) that is shaped such that it shields the radiation of said radiation source (11, 41) from those areas of said web of sheeting (3, 6) which are not in said illuminating zone.
20. A method of using an illuminating station as defined in any one of the previous claims for the production of an optically variable security element having partially designed areas showing different optical properties.
21. A method as defined in claim 20, characterized in that said optically variable element is an optical security element for securing bank notes, credit cards, and the like.
22. A method as defined in claim 20, characterized in that said optically variable element is a film, particularly an embossed film, laminated film, or sticker film.